

**REMARKS**

Claim 27 is added, and therefore claims 10 to 15 and 17 to 27 are pending in the present application.

In view of the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Claim 24 was objected to for the asserted reason that claim 24 is identical to claim 21.

It is respectfully submitted that subject matter as provided for in the context of claim 24 is plainly different from that of claim 21. For example, claim 24 provides for *using four threshold values* while claim 21 provides for *using two threshold values*. Therefore, withdrawal of the objection as to claim 24 is respectfully requested.

Claims 10 to 13, 15, 19 to 21, and 24 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Pat. No. 5,702,124 (“Foo”), in view of Japan Pat. Pub. No. 2001247001 (“Imai”). We disagree with the rejection for the following.

To reject a claim under 35 U.S.C. § 103(a), the Office bears the initial burden of presenting a *prima facie* case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish *prima facie* obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Also, as clearly indicated by the Supreme Court in *KSR*, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. *See KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). In this regard, the Supreme Court further noted that “rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.*, at 1396. Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art

reference(s) must teach or suggest all of the claim features. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Claim 10, as presented, is directed to a device for determining an instant a vehicle makes contact with an impact object and provides for *a determining* arrangement for *determining the instant of contact* by approximating a signal derived from an acceleration signal *using a quadratic function*. The combination of Foo and Imai does not teach these features.

The Office Action admits that Foo does not disclose the feature of *instant of contact*. Instead, the Office Action conclusorily asserts that one of ordinary skill in the art “readily recognizes that once the displacement (location) is determined and acceleration is known, the instant of contact would be known too.” However, any reading of Foo makes plain that it does not disclose the claimed such subject matter.

Further, using the already known acceleration for determining the instant of contact based on the displacement value would only lead to a starting point of the integration, whereas the starting point of the integration is also already known. Therefore, there is no reason for a person of ordinary skill in the art to perform such an integration.

As regards the secondary Imai reference, it only refers to how to distinguish head-on collision types from other collision types by “approximating the trajectory of the time integration value of the deceleration with respect to time” (see Imai, Par. [0009]). In fact, Imai does not disclose the feature of *determining the instant of contact by approximating a signal derived from an acceleration signal using a quadratic function*, as provided for in the context of claim 10. Therefore, the combination of Foo and Imai does not disclose all of the features as provided for in the context of claim 10, so that claim 10 is allowable, as are its dependent claims.

The present application specifically discloses that: “Precise knowledge of the instant of contact is useful, in particular, when determining the severity of [a] crash and thus when triggering the occupant safety devices in a precisely targeted manner with respect to their restraining force. This applies especially to multistage airbags and set-belt tensioners,” (see Specification, page 1, Par. [0003]).

Therefore, the problem solved by the presently claimed subject matter is to determine the instant of contact by approximating a signal derived from an acceleration signal using a quadratic function. Referring to Foo, a person of ordinary skill in the art might

at most incorporate additional thresholds to be compared with either the displacement value or the crash velocity value as indicated by Foo (at col. 3, lines 16 to 45). Even if Foo were considered in view of Imai, a person of ordinary skill in the art might would not approximate the crash acceleration signal or the crash velocity signal or the crash displacement signal with a quadratic function to determine *to determine the instant of contact*, as provided for in the context of the presently claimed subject matter.

Therefore, any combination of Foo and Imai would not disclose all of the features as provided for in the context of claim 10, so that claim 10 is allowable, as are its dependent claims 11 to 13, 15, 19 to 21, and 24. Withdrawal of the obviousness rejections of claims 10 to 13, 15, 19 to 21, and 24 is therefore respectfully requested.

Claim 14 was rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Foo and Imai, in further view of U.S. Pat. App. Pub. No. 2001/0043011 (“Ugusa”).

Claim 14 ultimately depends from claim 10 and it is therefore allowable for at least the same reasons as claim 10, since the further Ugusa reference does not cure the critical deficiencies of the combination of Foo and Imai as to claim 10.

Claims 17, 18, 22, 23, 25, and 26 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Foo and Imai, in further view of U.S. Pat. No. 6,636,794 (“Yamashita”).

Claims 17, 18, 22, and 23 ultimately depend from claim 10 and they are therefore allowable or at least the same reasons as claim 10, since the further Yamashita reference does not cure the critical deficiencies of the combination of Foo and Imai as to claim 10.

Independent claims 25 and 26 include features like those of claim 10, and they are therefore allowable for essentially the same reasons as claim 10.

As further regards all of the obviousness rejections, any Official Notice is respectfully traversed to the extent that it is maintained and it is requested that the Examiner provide specific evidence to establish those assertions and/or contentions that may be supported by the Official Notices under 37 C.F.R. § 1.104(d)(2) or otherwise. In particular, it

is respectfully requested that the Examiner provide an affidavit and/or that the Examiner provide published information concerning these assertions. This is because the § 103 rejections are apparently being based on assertions that draw on facts within the personal knowledge of the Examiner, since no support was provided for these otherwise conclusory and unsupported assertions. (See also MPEP § 2144.03).

Accordingly, all of claims 10 to 15 and 17 to 26 are allowable.

New claim 27 does not add new subject matter and it is supported by the present application, including the specification as originally filed. Further, claim 27 depends from claim 10 and it is therefore allowable for at least the same reasons as claim 10. Still further, claim 27 provides that *the determining arrangement determines the instant of contact from a vertex of the quadratic function*. Any reading of the cited references does not disclose this feature. Therefore, claim 27 is allowable for this additional reason.

Accordingly, all of claims 10 to 15 and 17 to 27 are allowable.

### CONCLUSION

It is therefore respectfully submitted that all of the presently pending claims are allowable. It is therefore respectfully requested that the rejections and objections be withdrawn, since all issues raised have been addressed and ~~obviated~~. An early and favorable action on the merits is therefore respectfully requested.

Respectfully submitted,

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